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SPECIFICATION FOR BED, INTENSIVE CARE

(First Reprint OCTOBER 1996)

UDC 615.478.2 : 684.422

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Gr2

April 1980

Indian Standard

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SPECIFICATION FOR BED, INTENSIVE CARE

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 10 December 1979, after the draft finalized by the Hospital Equipment Sectional Committee had been approved by the Consumer Products and Medical Instruments Division Council.

0.2 This standard contains clause 12 which calls for agreement between the purchaser and the supplier and which permits the purchaser to use his option for selection to suit his requirements.

0.3 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This Indian Standard lays down the requirements for intensive care bed used for the intensive care of the patients in hospitals and dispensaries.

2. MATERIAL

2.1 Material used for the construction of intensive care bed shall be corrosion resistant or shall have a protective finish. The materials given in 2.2 to 2.7, if used, shall conform to the requirements indicated against each.

2.2 **Tubings** — Electric resistance butt-welded steel tube (ERW) or cold drawn electric resistance butt-welded steel tube (CEW) conforming to IS : 2039-1964†.

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*Rules for rounding off numerical values (*revised*).

†Specification for steel tubes for bicycle and allied purposes.

2.3 **Flats, Angles, Strips and Bars** — cold rolled or hot rolled mild steel. Flats and strips when cold shall not develop cracks when doubled over either by pressure or by blows from hammer until internal radius is equal to the thickness of the material and the sides are parallel. The flats, angles and bars shall be conforming to IS : 226-1975*.

2.4 **Castors** — shall conform to IS : 4034-1968†.

2.5 **Plywood** — shall conform to IS : 303-1975‡.

2.6 **Laminated Sheet (Decorative Thermosetting Synthetic Resin Bonded Sheets)** — shall conform to IS : 2046-1969§.

2.7 **Stainless Steel Sheet** — conforming to Designation 04Cr18Ni10 or 07Cr18Ni9 of IS : 6911-1972||.

3. SHAPE AND DIMENSIONS

3.1 The typical shape of the intensive care bed shall be as shown in Fig. 1 and shall conform to the principal dimensions as indicated in Fig. 1.

3.2 A deviation of ± 5 percent shall be allowed on all major dimensions except on thickness of sheet and strip which shall be governed by the respective standards.

4. CONSTRUCTION

4.1 Base — The base shall be a rigid assembly capable of resisting diagonal flexing in both the vertical and horizontal planes. It shall be capable of taking the frame, bed top, head end and foot end and shall be fitted with four castors at each corner. The lever mechanism fitted at the base shall be capable of giving the various positions as described below:

a) Trendelenberg and reverse trendelenberg motion,

b) Various motion to the bed top, and

c) Spinal hyper-extension.

4.2 **Bed Top** — The bed top shall be made in three sections, namely, head section, centre section and leg section. It shall satisfy the following requirements:

a) The head section shall be capable of being raised or lowered to the angle of 80° from the horizontal;

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*Specification for structural steel (standard quality) (*fifth revision*).

†Specification for castors for hospital equipment.

‡Specification for plywood for general purposes (*second revision*).

§Specification for decorative thermosetting synthetic resin bonded laminated sheets (*first revision*).

||Specification for stainless steel plate, sheet and strip.

b) The centre section shall be made iii two parts, one part shall be fixed while the other shall be capable of being raised or lowered independently; and

c) The leg section shall be capable of being lowered or raised independently to an angle of 80° from the horizontal.

The entire bed top shall be capable of giving trendelenberg and reverse trendelenberg of 30”.

4.3 **Frame.-** The entire frame on which the bed top rests shall be of robust construction and shall not show any deformation when subjected to test as described in 8.1. The frame shall be fitted with the bed ends.

4.4 **Head-Ends and Foot-Ends —** The head-end and foot-end shall be capable of withstanding all reasonable loads imposed on them during normal use of the bed when fully loaded with bedding, patient and bed accessories. In the normal position the bed-ends shall be as near to vertical as possible and clearance in the bed-end locking devices shall not permit a movement in the direction of the longitudinal axis of the bed of more than ± 1” from the vertical nominal position. The bed-ends shall be fitted with the frame by suitable fasteners. Bed-ends may be provided with laminated panels if desired by the purchaser. The bed-ends shall be fitted with side rails which shall have arrangement for lowering it down.

4.4.1 The two wheels at the leg-end shall be provided with brake castors.

5. PERFORMANCE REQUIREMENTS

5.1 The bed shall be stable on castors in locked position.

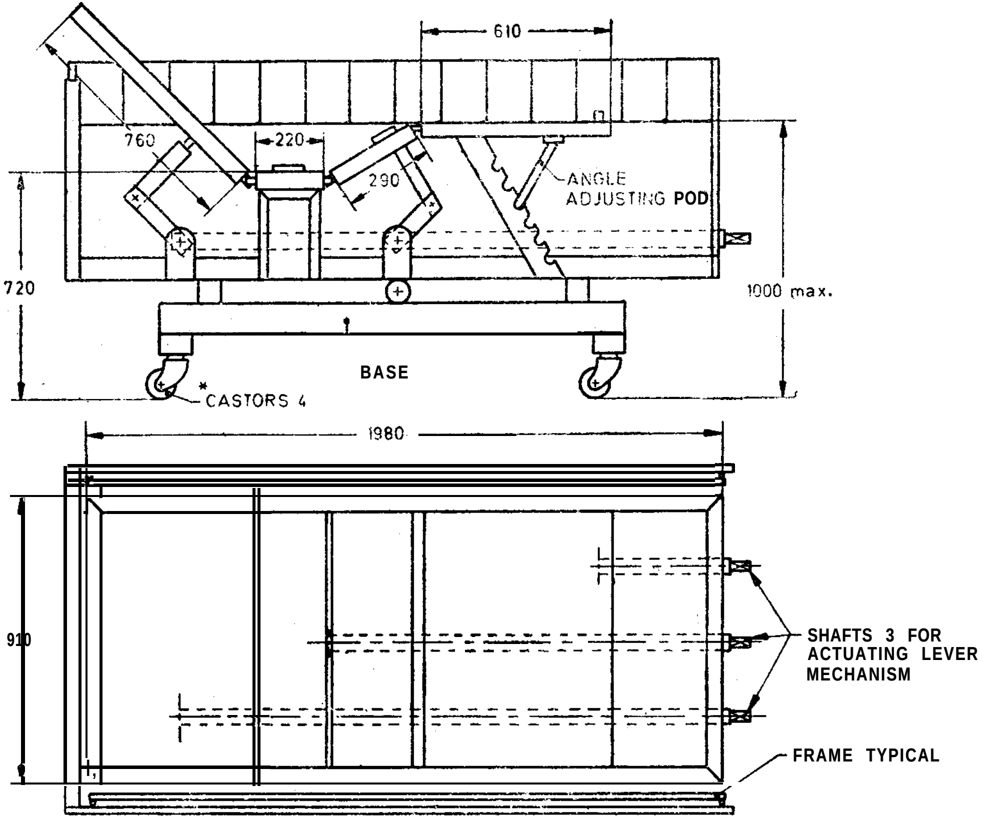
5.2 The bed shall be capable of moving on castors on smooth cemented floor from its static position when a pull of 120 N (12 kgf approx) maximum is applied to it and shall be capable of propulsion with a pull of 70 N (7 kgf approx) after it is set in motion.

5.3 The floor locks shall give rigidity to the bed; it shall not move when a force of 500 N (50 kgf approx) is applied to tha base in any direction.

5.4 When a force of 500 N (50 kgf approx) is applied vertically downward on the extreme end of the head section in the horizontal position, the leg section shall not lift by more than 10 mm.

5.5 When the accessories are clamped the bed shall not wobble. in normal condition.

5.6 When a mass of 5 kg is dropped from a height of 150 mm on the extreme end of the head or leg section, the bed shall not get damaged.



**See* IS : 4034-1968 Specification for castors for hospital equipment.

All dimensions in miilimetres.

FIG, 1 BED, INTENSIVE CARE

5.7 The bed shall be stable under all conditions of tilt and with a patient in any position related to the bed.

5.8 The mechanism controlling the adjustment of the bed functions shall be such that when an adjustment is made, the adjustable member is automatically locked and incapable of 'further movement until released.

5.9 The control shall be fitted as. not to interfere with any person moving close to the bed.

5.10 The movement of all the sections shall be smooth and jerk free.

6. WORKMANSHIP

6.1 The various components shall be accurately made to give a smooth operation and to satisfy the performance requirements as laid down in 5. All surfaces shall be well finished. All edges shall be rounded off. All welded joints shall have welds fully penetrating and shall be well finished.

7. FINISH — According to 5 of IS : 4033-1968*.

8. TESTS

8.1 Impact Test — For developing impact, a sand bag weighing 50 kg shall be dropped from a height of 300 mm over the frame at different points (one each for the two sides and one each for two ends). After completion of the test, the frame shall show no sign of mechanical failure.

8.2 Test for Bed-Ends — Place a completely assembled bed on a smooth horizontal floor surface by applying a horizontal force to the top of the corner posts of each bed-ends in turn. Move the ends backward and forward along with the longitudinal axis of the bed and measure the longitudinal movement of the bed-ends in terms of degrees of arc of movement. Subject each bed-end in turn to an alternative force of 700 N (70 kgf approx) applied at the mid-point of a line joining the tops of two corner posts and in a horizontal direction along the longitudinal axis of the bed for 50 complete cycles. On completion of the alternating load, measure again the longitudinal movement of the bed-ends. There shall be no change in the longitudinal movement after completion of 50 cycles and the bed shall not get damaged.

8.3 The intensive care bed shall also satisfy the tests specified in 6.1.1 and 6.1.2 of IS · 4033-1968* but when testing the performance under load, a total weight of 2 kN (200 kg approx) shall be distributed over the full width of the bed in its horizontal position by putting sand bags of equal capacity at all the places of the bed top.

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*General requirements for hospital furniture.

9. ACCESSORIES

9.1 The bed may be provided with the following optional accessories:

a) laminated board panels for sides and ends,
b) chromium plated saline rod,
c) Chart holder; and
d) Provision to keep oxygen cylinder.

10. INSTRUCTIONS FOR USE AND MAINTENANCE

10.1 An instruction manual giving the following information shall be supplied with *the* bed:

a) Brief instructions for installation and maintenance, and
b) Instructions for correct operation of the bed.

11. MARKING

11.1 Each bed shall have a label fixed to it bearing the following information:

a) Manufacturer's name, initial or recognized trade-mark;
b) Any special instructions for safe handling of the bed; and
c) Country of origin.

11.2 BIS Certification Marking

The product may also be marked with Standard Mark.

11.2.1 The use **of the** Standard Mark **is governed by the provisions of the Bureau** of Indian Standards Act, 1986 and the **Rules and Regulations made** thereunder. The **details of conditions under which the licence for the use of** Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

12. PACKING

12.1 Each bed may be packed as agreed to between the purchaser and the manufacturer.

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Printed at Printograph, New Delhi (INDIA).